MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for September, 1901, is based on reports from about 3,100 stations furnished by employees and voluntary observers, classified as follows: regular stations of the Weather Bureau, 159; West Indian service stations, 13; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 18; United States Life-Saving Service, 9; Southern Pacific Railway Company, 96; Hawaiian Government Survey, 200; Canadian Meteorological Service, 32; Jamaica Weather Office, 160; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3; Costa Rican Service, 7. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Government Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; Commander Chapman C. Todd, Hydrographer, United States Navy; H. Pittier, Director of the Physico-Geographic Institute, San Jose, Costa Rica; Captain François S. Chaves, Director of the Meteorological Observatory, Ponta Delgada, St. Michaels, Azores, and W. M. Shaw, Esq., Secretary, Meteorological Office, London; Rev. Josef Algué, S. J., Director, Phillipine Weather Service.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. The Hawaiian standard meridian is 157° 30′, or $10^h\ 30^m$ west of Greenwich. The Costa Rican standard of time is that of San Jose, $0^h\ 36^m\ 13^s$ slower than seventy-fifth meridian time, corresponding to $5^h\ 36^m$ west of Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local standard is mentioned.

Barometric pressures, whether "station pressures" or "sea-level pressures," are now always reduced to standard gravity, so that they express pressure in a standard system of absolute measures.

During the temporary absence of Professor Abbe, Mr. H. H. Kimball has been designated Acting Editor of the REVIEW.

FORECASTS AND WARNINGS.

By Prof. H. B. GARRIOTT, in charge of Forecast Division.

Forecasts of the direction and force of the wind and the state of the weather along the transatlantic steamer routes from the north Atlantic coast of the United States to the Banks of Newfoundland were issued from Washington daily at 8 a. m. and 8 p. m. These forecasts covered the first three days out of steamers bound east from New York and Boston, and the morning forecasts were published, with forecasts of fog, in the weather maps issued at Boston, New York, Philadelphia, Baltimore, and Washington.

The most important tropical storm of the month appeared near the Island of St. Kitts on the 11th; moved thence westward over the north part of the Caribbean Sea from the 12th to the 15th, recurved over the Gulf of Mexico and reached the middle Gulf coast of the United States by the 17th, and passed from that section northeastward off the south Atlantic coast of the United States. While this disturbance was lacking in the energy of a hurricane it was attended by high winds and heavy rain throughout its course.

Several storms of marked strength for the season, visited the Great Lakes. The first of these crossed the upper lakes during the 7th and 8th, causing some disasters to shipping in southern Lake Huron. The period from the 11th to the 17th was a stormy one in the Lake region, and shipping on Lakes Michigan and Huron suffered some damage. Unsettled weather also prevailed on the lakes from the 21st to the 25th. The first winter-type storm of the season appeared on the north Pacific coast during the evening of the 20th, causing severe gales at sea and continued rain. On the 20th and 21st rain warnings were issued to California fruit growers and railroads.

Timely and accurate warnings were issued in connection with all of the general storms which appeared in the United States and the West Indies.

The first general frost-bearing cool wave of the season swept from the northeastern Rocky Mountain slope southward to Arkansas and Tennessee, and eastward to the north Atlantic coast States from the 17th to the 20th. In the north Pacific coast districts frost occurred on a number of dates.

Ample warnings were distributed throughout the districts visited by the frosts of the period referred to.